

ANNUAL REPORT-2020-21



DEPARTMENT OF LIFE SCIENCES

ରମାଦେବୀ ମହିଳା ବିଶ୍ୱବିଦ୍ୟାଳୟ, ଭୁବନେଶ୍ୱର
Rama Devi Women's University, Vidya Vihar,
Bhubaneswar

1.Name of the department: Department of Life Science

2. Mission and vision

Mission:

We not only want to give good education to students, but also our mission is to educate them in the following ways,

- Providing adequate knowledge and advancement in plant science (theory and practical)
- Use of modern technology and agriculture
- To identify rare and wild plants and their conservation
- To maintain herbarium
- To pursue a career in science
- Above to them industry ready to compete at national and international level

Vision:

The committed faculty members with the available infrastructure intent to disseminate knowledge, generate interest among the students on the subjects and its applied aspects and to make them par excellence so that they will be able to pursue a career in higher studies and research.

3. Academic Programmes:

- a. M.Sc. Life Science
- b. Ph.D. Life Science
- c. M.Sc. Industrial Microbiology
- d. Skill based certificate course

4. Publications/patents

JOURNAL PAPERS

Sl no.	Paper Title	Author(s)	Name of the Journal; Volume; Page no.	Year of Publication	Link to the article (doi/website)
1.	Characterization of endophytic bacteria Enterobacter cloacae MG00145 isolated from Ocimum sanctum with indole acetic acid (IAA) production and plant growth	S Panigrahi, S Mohanty, C C Rath.	South African journal of Botany 134: 17-26.	2020	https://doi.org/10.1016/j.sajb.2019.09.017

	promoting capabilities against selected crops.				
2.	Synthetic microfibers: source, transport and their remediation	Mishra, RP Singh, C. C. Rath , AP Das	J. Water Process Engineering. 38: 1016-12	2020	https://doi.org/10.1016/j.jwpe.2020.101612
3.	Endophytic fungi from <i>Oryza sativa</i> L: Isolation, characterization and production of GA ₃ in Submerged fermentation.	Anchal Tripathy and C. C. Rath .	Int. J. Curr.Microbiol. Appl. Sci. 9(11): 1007-1020	2020	https://doi.org/10.20546/i.jcmas.2020.911.119
4.	In Vitro characterization of antifungal activity of selected essential oils.	A. Samal and C. Rath	Ind. Drugs., 56(12):56-59.	2020	DOI: 10.53879/id.57.12.12466
5.	Monitoring the advancement and evaluation of a novel diagnostic method for rapid detection of tuberculosis	Amrita Masanta, K.G.Achary and Shikha Singh	International Journal of Research and Scientific Innovation (IJRSI) Volume VII, Issue VI, June 2020 ISSN 2321-2705	2020	http://doi.one/10.1729/Journal.25050

6.	Rapid Detection of Tuberculosis using Urine Samples: Development & Validation of ELISA Technique	Masanta, A., Achary, K. G., & Singh, S	International Journal of Research and Scientific Innovation (IJRSI). Volume VII, Issue VI, ISSN 2321–2705.	2020	
7.	Isolation and characterization of Botrytis antigen from <i>Allium cepa</i> L. and its role in rapid diagnosis of neck rot	Sahoo, P. K., Masanta, A., Achary, K. G., & Singh, S	Journal of Emerging Technologies and Innovative Research ISSN-2349-5162) JETIR2012278 Volume 7, Issue 12	2020	www.jetir.org
8.	Evaluation of insecticidal and repellency activity of leaf extracts of <i>Andrographis paniculata</i> against <i>Tribolium castaneum</i> (red flour beetle).	B. Baliyarsingh, A. Mishra and S.K.Rath	Int. Journal of Tropical Insect Science. 41 (1): 765-773.	2020	https://doi.org/10.1007/s42690-020-00267-9
9.	A comprehensive scientific overview of <i>Blepharispermum subsessile</i> DC. (Asteraceae), a conservation concern medicinal plant with promising pharmaceutical potential.	S.K.Naik, S.K.Behera, S.K.Rath and J.K.Patro	Indian Journal of Traditional Knowledge. 19 (1). 208-217.	2020	DOI: 10.56042/ijtk.v19i1.30869
10	Lectins: Classification, Properties and	D. Pani and S. K.Rath.	Sabujima, 28: 30-34	2020	

	Biotechnological Aspects				
11	Preliminary analysis of Insecticidal and antimicrobial potential of <i>Andrographis paniculata</i> .	B. Baliyarsingh, A.K. Mishra and S.K.Rath	Journal of Advances Microbiology. 4 (1), 37-44.	2020	
12	Synthetic microfibers: Pollution toxicity and remediation,	Singh, R.P., Mishra, S., Das, A.P.	Chemosphere.	2020 127199	https://doi.org/10.1016/j.chemosphere.2020.127199
13	Synthetic microfibers: Source, transport and their remediation	Mishra, S., Singh, R.P., Rath, C. C., Das, A. P	Journal of Water Process Engineering.	2020 38 101612	https://doi.org/10.1016/j.jwpe.2020.101612

BOOKS/BOOK CHAPTERS

Sl no.	Book/book chapter Title	Author(s)	ISBN/ISSN number	Year of Publication	Name of the publisher
1.	Medico-Biowealth of India Vol-1.	Rajkumari Supriya Devi, , Sanjeet Kumar	ISBN:978-81-945667-4-8	2020	
2.	Microbial metagenomics: Current advances in investigating microbial ecology and population dynamics.	Shreya Ghosh & Das A.P.	9781138599352	2020	Frontiers in Soil and Environmental Microbiology to be published by CRC Press, a Taylor & Francis,
3.	Molecular identification and phylogenetic analysis of Indian mangrove horseshoe crab.	B.Bal and A.P. Das.		2020	Research and considerations in the global efforts to conserve and protect globally the four species of Horseshoe Crabs. Springer, LLC.

4.	Recovery of manganese from low grade ferromanganese ores using <i>B. safensis</i> .	B. Bal and A. P. Das.	978-981-15-0990-2	2020	Recent Developments in Waste Management Springer
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PATENTS

Sl no.	Title of patent	Patent holders	Patent type & Country	Year of Filing	Status (Published/granted)

1. Research Projects

S.No	Title of the project	Name of the PI/Co-PI	Funding Agency	Amount mobilized
1.	Development of antibody-based biosensor kit for rapid detection of tuberculosis using urine samples	Dr. Shikha Singh	DST, Govt. of India	
2.	Development of rapid diagnostic kit for early detection of rhizome rot in turmeric and ginger	Co- PI Dr. Alok Prasad Das	DST, Govt. of India	2856800 Lakhs

3. Teachers' achievement

Dr. Shikha Singh

- i. 201831003056: Inventor: Shikha Singh, Method of Detecting Rhizome Rot Turmeric Crop and ICT Kit For Early Diagnosis of the Same.
- ii. Organising Secretary of International webinar on “Understanding the COVID 19 Pandemic: Challenges and Opportunities”, Rama Devi Women’s University, 29-30th June, 2020.

- iii. Invited Speaker, at the 8th International Conference on Agricultural and Biological Sciences (ABS 2022), Shenzhen University, China June 29-30, 2020, Digital rhizome rot diagnosis on to the field: an effortless approach for the farmers.
- iv. Invited Speaker in National conference on "Recent Advances in Biological Research (RABR 2020), Heredity Life Sciences, KIIT University, India, 8-10th August, 2020.
- v. Invited Panelist in Panel discussion on "IPR Protection in Cyber World", TNTDPC, August, 2020.
- vi. Organising Secretary of International Virtual Workshop on "Fundamentals of Bio-informatics", Rama Devi Women's University, January, 29-30, 2021.

Dr. Sakti Kanta Rath

- i. 202031056520: Inventor(s): D. Mohapatra, **S. K. Rath** and P. K. Mohapatra, A field Compatible Biofungal composition for degradation of organophosphate insecticides, Indian Patent.
- ii. **Dr. Sakti Kanta Rath**, Evaluation of Antimicrobial and Antidiabetic activities of selected parasitic plants of Odisha, 2021, Science and Technology Dept., Govt. of Odisha.

Dr. Alok Prasad Das

- i. Delivered Invited talk in the National Conference on Recent trends in Interdisciplinary Research in Basic Science, IQAC cell, Pillai HOC college of Arts, Science & commerce, Rasayani, Maharashtra, India Organized International Webinar on "Understanding the COVID-19 Pandemic: Challenges and Opportunities" during 29th and 30th June, 2020, Dept. of Life Sciences, RDWU.
- ii. Delivered Invited Talk on "Recycling of synthetic microplastics: An environmental perspective for controlling microplastic pollution" at the Fifth International Conference on Reuse and Recycling of Materials (Polymers, Wood, Paper, Leather, Glass, Metals, Ceramics, Semi-Conductors, Water etc) and their products (ICRM – 2020), 11th -13th December 2020. Mahatma Gandhi University Kottayam, Kerala, India.
- iii. A.P. Das. Bacterial extraction and recycling of Manganese from mining residues 2nd International Conference on Bioprocess for Sustainable Environment and Energy (ICBSEE-India-2020) 5 -7th March, NIT Rourkela, Odisha.

- iv. Delivered Invited talk in the International online Conference on Advanced Nano Materials, Organized by center for Nanaoscience & Technology, Mahatma Gandhi University, Kerala, from 14-16 December 2021.
- v. Delivered Invited talk in the AICTE sponsored STTP on Functional Metagenomics and Bioprocessing of Therapeutic Enzymes organized by the Department of Biotechnology, Sri Venkateswara College of Engineering, Sriperumbudur, 22nd-27th February 2021.
- vi. Organising member of International Webinar on “Understanding the COVID-19 Pandemic: Challenges and Opportunities” on 29th & 30th June 2020.
- vii. Organising member of International Workshop on “Fundamentals of Bio-informatics” organized by Dept. of Life Sciences, Rama Devi Women’s University, 29th-30th January, 2021.

Dr. Navneet Kaur

- i. Organising member of International Webinar on “Understanding the COVID-19 Pandemic: Challenges and Opportunities” on 29th & 30th June 2020.
- ii. Organising member of International Workshop on “Fundamentals of Bio-informatics” organized by Dept. of Life Sciences, Rama Devi Women’s University, 29th–30th January, 2021.

Dr. Mukta Mayee Kumbhar

- i. Participated in FDP on “Internet of Things -Applications” organised by Vikas Group of Institutions, Vijayawada 01st-05th June, 2020.
- ii. Participated in Induction Training/Orientation Programme Teaching Learning Centre, organised by Ramanujan College, University of Delhi, Under the aegis of MHRD, PMMMNMSTT 04th June to 01st July 2020.
- iii. Participated in Online FDP on “Role of Technology in a Post Covid World” organised by Dept. of Electronics & Communication Engineering, RMK Engineering College, Tiruvallur, Chennai 12th June, 2020.
- iv. Participated in Workshop for Empowering Teaching through Online Mode (JNU-WETOM III) on Theme ‘Online Assessment and Evaluation’ organised by Jawaharlal Nehru University, New Delhi, India, 13-14 June, 2020.
- v. Organising member of International Webinar on “Understanding the COVID-19 Pandemic: Challenges and Opportunities” on 29th & 30th June 2020.

- vi. Participated in Webinar on “Segmentation of Leucocytes for the detection of Leukemia using soft Computing Methods” organised by St. Mother Theresa Engineering College, Thoothukudi, Tamil Nadu on 3rd July 2020.
- vii. Participated in International Webinar on “Need for Gender Research on COVID-19 Global Pandemic: Challenges and Prospects” Jointly organized by PG Department of Gender Studies and Sarala Devi Centre for Gender Research, RDWU, Bhubaneswar 4th July, 2020.
- viii. Participated in Webinar on “Investigation of potential new treatments for diabetes, cancer and COVID-19’ organised by Department of Zoology, Mizoram University on 6th July 2020.
- ix. Participated in Workshop for Empowering Teaching through Online Mode (JNU-WETOM IV) on the theme ‘Going Online: Classroom, Field Work & Research’ organised by Jawaharlal Nehru University, New Delhi, India on 11-12 July, 2020.
- x. Participated in of Biochemistry & Biotechnology, Annamalai University on 20th July, 2020.
- xi. Participated in Panel Discussion on “National Education Policy 2020: Perspectives in Higher Education” organised by Internal Quality Assurance Cell, Rama Devi Women’s University, Bhubaneswar 28th August, 2020.
- xii. Faculty Development Programme on "Managing Online Classes and Co-Creating MOOCS 3.0" organised by Teaching Learning Centre, Ramanujan College, University of Delhi Under the aegis of MHRD, PMMMNMTT 25th July - 10th August, 2020
- xiii. Mukta Mayee Kumbhar presented a paper on “Seasonal incidence of Microsporidia in the plain Tiger butterfly, *Danaus chrysippus*” on Webinar on “Issues and Challenges on Agricultural and Aquatic Sectors along with Human Health in the Present Scenario of COVID19" Organized by Department of Zoology, Lucknow Christian College, Lucknow 7th- 8th, September, 2020.
- xiv. Organising member of International Workshop on “Fundamentals of Bio-informatics” organized by Dept. of Life Sciences, Rama Devi Women’s University, 29th–30th January, 2021.
- xv. Presented paper International E-Seminar on “Issues and Challenges on Agricultural and Aquatic Sectors along with Human Health in the Present Scenario of COVID-19, Department of Zoology, Lucknow Christian College, Lucknow, 7th -8th Sep 2020.

- xvi. Organized International Webinar on Understanding the COVID-19 Pandemic: Challenges and Opportunities, RD Women's University, Bhubaneswar, 29th -30th June 2020.

Ms. Jamuna Tudu

- i. 4-Week Induction/Orientation Programme for “Faculty in Universities/ Colleges/ Institutes of Higher Education”, organised by Teaching Learning Centre, Ramanujan College, University of Delhi, Sponsored by Ministry of Human Resource Development, Pandit Madan Mohan Malviya National Mission on Teachers and Teaching, 4th June to 1st July, 2020.
- ii. Organising member of International Webinar on “Understanding the COVID-19 Pandemic: Challenges and Opportunities” on 29th & 30th June 2020.
- iii. Organising member of International Workshop on “Fundamentals of Bio-informatics” organized by Dept. of Life Sciences, Rama Devi Women's University, 29th–30th January, 2021.

4. Students' achievement

- i. Sudha Suman, P.G. student of Dept. of Life Sciences qualified NET-LS
- ii. Barsa Baisakhi Nayak, M.Phil student of Dept. of Life Sciences qualified GATE, 2021 with AIR-3881.
- iii. Rojalin Priyadarshini Singh, M.Phil student of Dept. of Life Sciences qualified GATE, 2021 with AIR-5780.
- iv. Sourajita Subhadarshini, P.G. student of Dept. of Life Sciences qualified GATE, 2021 with AIR-650.
- v. Swaranjali Jena, P.G. student of Dept. of Life Sciences qualified GATE, 2021 with AIR-3309.
- vi. Alaka Sanghamitra, P.G. student of Dept. of Life Sciences qualified GATE, 2021 with AIR-7927.
- vii. Barsha Pani, P.G. 2nd Year student of Dept. of Life Sciences qualified GATE, 2021 with AIR-3881.
- viii. Sonalisha Sahu, P.G. 2nd Year student of Dept. of Life Sciences qualified GATE, 2021 with AIR-2895.
- ix. Lopamudra Behera attended 3day workshop (webinars and virtual demonstration) organised by RMNH, Bhubaneswar from 20-22nd March, 2021.
- x. Manisha kerketta and Tejaswini Dakua won 1st prize in Treasure Hunt 2021, at Rama Devi Women's University.

xi. Debashrita Mishra attended National level webinar on “Kindling Curiosity: Ushering Young Minds into Research” organised by Department of Zoology at Rajdhani Degree College, Bhubaneswar. from 6th to 27th November 2020.

xii. **Devi Sugandha De**

- a. Placed in top three in Online Speech Competition on Raja Festival organised by ABVP, Chhatra Sandesh, 2020.
- b. Placed in 2nd position in Online Rangoli Competition organised by ABVP, Ravenshaw University 2020.
- c. Placed in 1st position in Online District Level Poetry Competition organised by ABVP, Mayurbhanj 2020.
- d. Placed in 1st position in Online Speech Competition On International Yoga Day organised by Chhatra Sandesh, 2020.
- e. Secured 60% in National Level E-Quiz on Environment and Biodiversity organised by Dr. Virendra Swarup Institute of Professional Studies, Kanpur from 30th-31st July 2020.
- f. Secured 75% in Online Quiz on Digital Electronics organised by SIT, Erode, Tamil Nadu, 2020.
- g. Placed in 3rd position in English Debate Competition on Science Day, 2021.
- h. Attended webinar on COVID-19 awareness programme organised by Pimpri Chinchwad College of Engineering and Research, May 2020.
- i. Attended One Week Certificate Course on Apiculture organised by Department of zoology, Balwant College, Vita, Sangli, Maharashtra from 13th July – 19th July 2020.
- j. Attended State Level Multidisciplinary Webinar on Diversity Of Birds organised by Department Of Zoology, Indraraj Arts, Commerce and Science College, Aurangabad, India on 19th July 2020.
- k. Attended COVINAR- A Week Long International Webinar On COVID-19 organised by Department Of Biochemistry And Molecular Biology, Pondicherry University from 20th-24th July 2020
- l. Attended organised National Webinar Lecture On Scope, Employment Opportunities And Future Research In Applied Zoology by Department Of Zoology, Ramakrishna Mission Vivekananda College, Chennai from 27th July- 30th July 2020.
- m. Attended International Webinar On Research Frontiers And Prospects In Biosciences And Biotechnology organised by PG Department Of Biosciences And Biotechnology, Fakir Mohan University, Balasore, Odisha from 28th & 29th July 2020.
- n. Attended International Webinars On Health Sciences And Human Diseases organised by Department Of Zoology & Internal Quality Assurance Cell, Dinabandhu Andrews College, Kolkata on 30th July 2020.
- o. Attended National Webinar On Fermentation Technology organised by Department of Microbiology, K.R. College Of Arts And Science, Kovilpatti on 5th August 2020

- p. Attended International Webinar On “Environmental Conservation With Sustainable And renewable energy Resources.” organised by A. Veeriya Vandayar Memorial Sri Pushpam College, Thanjavur, Tamil Nadu on 10th August 2020.
- q. Attended Bench to Bedside: An Overview of Drug Development Process organised by Mizoram University, Aizwal, Mizoram on 4th August 2020.
- r. Attended Innovative Technologies, Entrepreneurship Avenues, Livelihood Enhancement in Sustainable Management of Animal Farming organised by PG and Research Department Of Zoology and Indian Science Congress Association, Dr. Ambedkar Government Arts College, Chennai on 3rd & 4th August 2020
- s. Attended Education Policy 2020: Challenges and Opportunities organised by Department of Sociology, Kalicharan PG College, Lucknow on 8th August 2020.
- t. Attended International Webinar on Recent Progress in Applications of Nanoparticles In Aquaculture organised by Arulmigu Palaniandavar Arts College For Women, Palani, Kodaikanal on 13th August 2020.
- u. Attended One Week Online National Development Program On E-Contents and ICT Tools For Innovative And Effective Teaching & Learning Process organised by Roorkee College Of Management & Computer Applications, Roorkee, Uttarakhand from 8th-14th August 2020.
- v. Attended International Webinar on Biotechnological Innovations In 21st Century organised by Department of Biotechnology, Maharaja Sriram Chandra Bhanjdeo University, Baripada from 19th-20th March 2021
- w. Attended Seminar on Strategies to Build a Successful Career organised by Rama Devi Women’s University on 19th may 2021.
- x. Attended Webinar on International Day For Biological Diversity organised by Maharaja Sriram Chandra Bhanjdeo University, on 22nd May 2021

xiii. **Sriparna Bijaya**

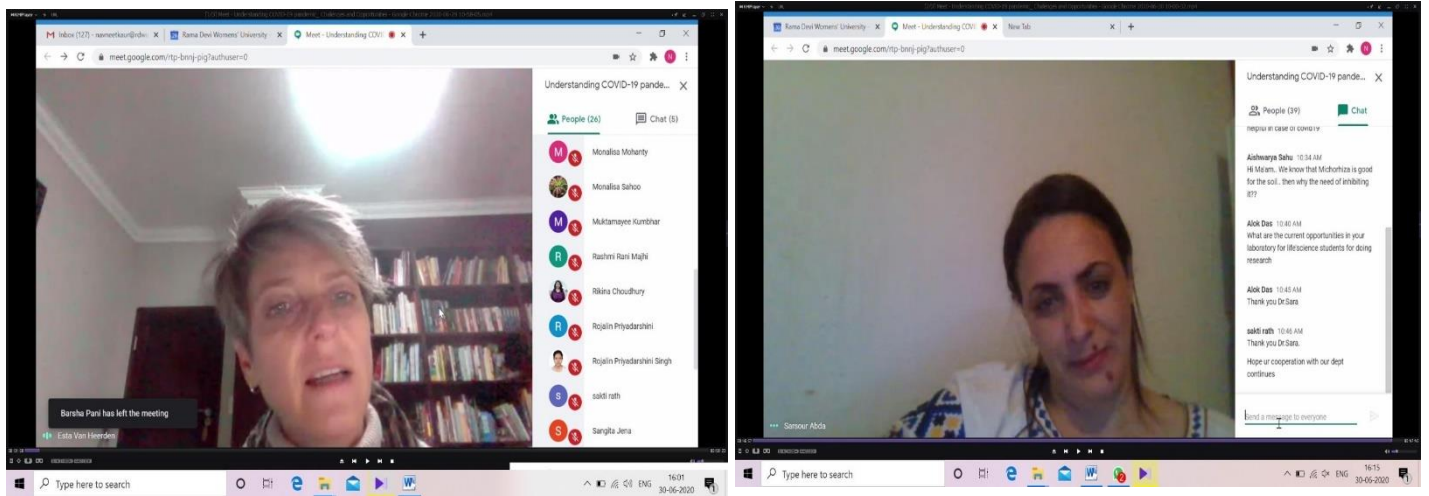
- a. Awarded second prize in science quiz competition on the occasion of National Science Day 2021, held at Ramadevi Women’s University.
- b. Awarded First position in Treasure Hunt in Basant Utsav 2021, held at Rama Devi Women’s University.
- c. Attended 3days workshop at Nature Classroom organised by Regional Museum of Natural History, Bhubaneswar, held on 20th -22nd March 2021.
- d. Attended the International Webinar on The Career Catalyst: Plan, Prepare& Prosper in Life Science, JSS AHER, Mysuru, held on 8th and 9th May 2021.
- e. Attended the International Webinar on Biotechnological Innovation in 21st Century, held on, organized by Department of Biotechnology Maharaja Sriram Chandra Bhanj Deo University from 19th & 20th March 2021
- f. Attended Workshops on the occasion of Brain Awareness Week held by IIT Gandhinagar, held on 15-21 March 2021.

xiv. **Alisha Nayak**

- a. Attended National Level Webinar on "Biodiversity Conservation and Waste Management" on 23th September 2020 held by Department Of Botany at Ekamra Degree College, Bhubaneswar.
 - b. Attended International level webinar on "The International Level Webinar on Neurodegenerative Disorders in Rodents: Importance In Translational Research" on 27th September 2020 held by Department of Zoology at Ekamra Degree College, Bhubaneswar.
- xv. **Sushmita Swain**
- a. Attended International Webinar on "The Career Catalyst : Plan, Prepare & Prosper in Life Sciences conducted by Division of Biochemistry, Faculty of Life sciences, JSS AHER, MYSURU on May 8th & 9th 2021.
 - b. Secured above 75% marks in Ayurveda Day Quiz competition-2020 organised by CIET-NCERT from 13th-30th November 2020.
- xvi. **Biswasini Priyadarshini**
- a. Attended National conclave on "Science and Technology Inventions for the Welfare of Tribal Population" on 24th-25th February, 2020 held at Institute of Life Science (ILS), Bhubaneswar.
 - b. Attended National conference on "Advances in Life Sciences & Biotechnology" on 27th -28th February, 2020 held by Dept. of life science and Dept. of Biotechnology at Rama Devi Women's University and presented poster on "Decoding Covid-19: Challenges And Solutions".
 - c. Bagged second prize in Science quiz on the occasion of National Science Day, 2020 held at Rama Devi Women's University.
 - d. Won third prize in debate competition on the occasion of National Science Day, 2020 held at Rama Devi Women's University.
 - e. Awarded second prize in debate competition on the occasion of National Science Day, 2021 held at Rama Devi Women's University.
- xvii. **Poonam Priyadarshini**
- i. Participated in National level quiz contest on "Agriwhiz: Agriculture and general awareness" on 12th February 2020 organised by KIIT School of Rural Management.
 - ii. Participated in the "ELIXIR-2020"-A state level Management fest won 2nd Prize in Dance Competition on 14th Feb 2020 at Trident group of Institutions, Bhubaneswar organised by Indian society for training and development.
 - iii. Participated in the "ELIXIR-2020"-A state level Management fest won 3rd Prize in Poster Making on 15th February 2020 at Trident Group of Institutions, Bhubaneswar organised by Indian society for training and development.
 - iv. Attended National Conclave on "Spit-free India Movement" on 15th August 2020 to prevent the spread of COVID-19 organised by National Service Scheme.
 - v. Won 1st Prize in Treasure Hunt on the occasion of "BASANT UTSAV-2021" held at Ramadevi Women's University, Bhubaneswar.
 - vi. Participated in National Quiz on the occasion of "International Day of Yoga-2021" organised by Ministry of Ayush.

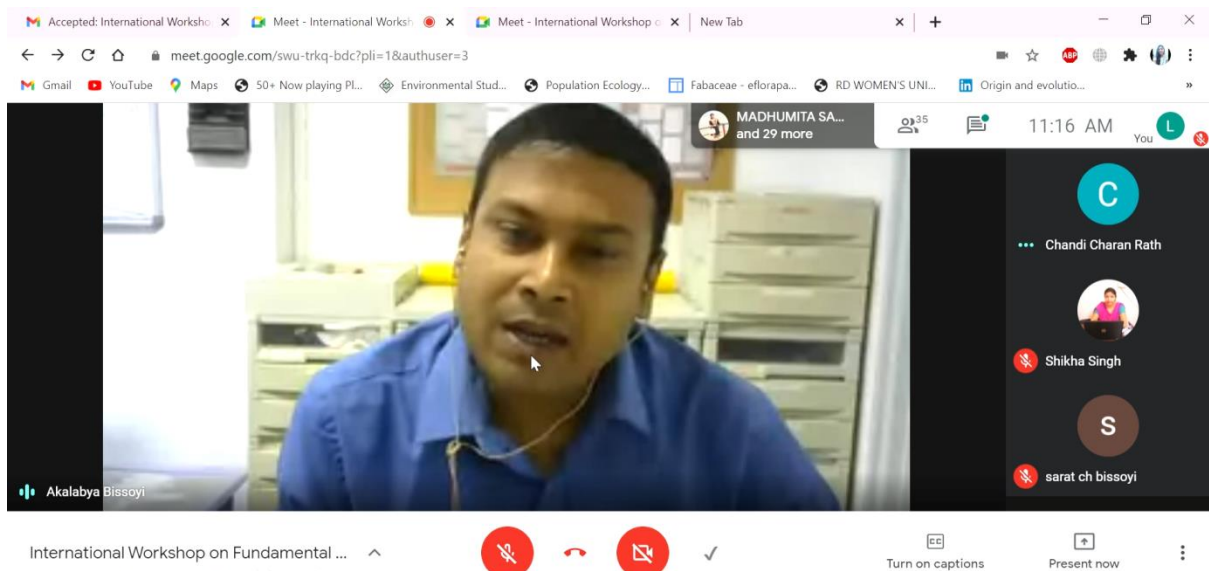
5. Seminars/FDPs/Workshops organized

1. International Webinar on “Understanding the COVID-19 Pandemic: Challenges and Opportunities” on 29th & 30th June 202



Dr. Esta Van Heerden delivering the inaugural lecture Dr. Sara Magdoui during the technical session

2. International Workshop on “Fundamentals of Bio-informatics” organized by Dept. of Life Sciences, Rama Devi Women’s University, 29th–30th January, 2021.



Dr. Akalabya Bissoyi during the technical session.



Student presenting Seminar



Visit of UGC team to Life Science Dept. on 17.02.2021

6. Social outreach programmes conducted:

- i. Central Lab Facility Visit OUAT, Odisha University of Agriculture & Technology 16th July, 2021.





- ii. Students exposure visit to Central Institute of Freshwater Aquaculture (CIFA) 27th Feb, 2021.



- iii. Students exposure visit to the Central Instrumentation Facility of Odisha University of Agriculture & Technology (OUAT) on 16th March, 2021.



7. Any other

- i. Alumni activities: NIL
ii. Certificate/skill courses: NIL